

We Claim:

1. A method of consistently producing a coated particulate material having a reduced level of interfering particles and having particles of an alkaline earth metal carbonate with an median particle size between about 0.8  $\mu\text{m}$  and 1.95  $\mu\text{m}$  comprising:

(a) producing a coated particulate by treating particles of an inorganic particulate material comprising an alkaline earth metal carbonate compound having an median particle size between about 0.8  $\mu\text{m}$  and about 1.95  $\mu\text{m}$  by reaction with a hydrophobizing surface treatment agent comprising one or more aliphatic carboxylic acids having at least 10 chain carbon atoms to produce a hydrophobic coating on the particles;

(b) treating the coated particulate to result in a carbonate product having an agglomerate level of 0.285% by weight or below for interfering particles at 44  $\mu\text{m}$  or above.

2. The method of claim 1, wherein the particles of an inorganic particulate material are preheated prior to coating.

3. The method according to claim 1, wherein the interfering particles above 44  $\mu\text{m}$  are removed to a level of below about 0.15% by weight.

4. The method according to claim 3, wherein the interfering particles above 44  $\mu\text{m}$  are removed to a level of between about 0.15 and 0.08% by weight.

5. The method according to claim 4, wherein the interfering particles above 44  $\mu\text{m}$  are removed to a level of below about 0.08% by weight.

6. The method according to claim 1, wherein the median particle size of the product is at or below 1.5  $\mu\text{m}$ .

7. The method according to claim 6, wherein the median particle size of the product is at or below 1  $\mu\text{m}$ .

8. The method according to claim 1, further comprising milling the removed interfering particles and reintroducing the milled interfering particles to the product.

9. A method of producing a breathable film which comprises the steps of:

(a) producing a coated particulate by treating particles of an inorganic particulate material comprising an alkaline earth metal carbonate compound by reaction with a hydrophobizing surface treatment agent comprising one or more aliphatic carboxylic acids having at least 10 chain carbon atoms to produce a hydrophobic coating on the particles;

(b) treating the coated particulate to result in a carbonate product having a reduced level of interfering particles;

(c) producing a filled thermoplastic composition by mixing the inorganic filler produced in steps (a)-(b) with a heated thermoplastic polymer; and

(d) shaping the composition produced in step (c) by heat processing to form a film product.

10. A method according to claim 9, wherein the hydrophobizing surface treatment agent comprises one or more fatty acids selected from stearic acid, palmitic acid, behenic acid, montanic acid, capric acid, lauric acid, myristic acid, isostearic acid and cerotic acid.

11. A method according to claim 9, wherein the surface treatment agent comprises stearic acid in an amount of from about 0.5% to about 1.5% by dry weight based on the dry weight of the inorganic particulate material.

12. A method according to claim 9, wherein the surface treatment agent is used in an amount of from about 0.8% to about 1.3% by dry weight based on the dry weight of the inorganic particulate material.

13. A method as claimed in claim 9, which includes prior to step (a) treating the inorganic particulate material by the steps of (i) grinding the material by a grinding process; and optionally (ii) drying the material.

14. A method as claimed in claim 13, wherein the grinding step (i) comprises wet grinding in an aqueous suspension.

15. A method as claimed in claim 13, wherein the grinding step (i) comprises dry grinding.

16. A method as claimed in claim 9, wherein the treating of the inorganic particulate material with the surface treatment agent in step (a) is carried out by heating in an indirectly heated vessel having an atmosphere comprising the surface treatment agent.

17. A method according to claim 9, wherein at least 95% by weight of the inorganic particulate material is calcium carbonate.

18. A method according to claim 9, wherein the mean particle size of the inorganic particulate material is in the range from 0.5  $\mu\text{m}$  to 10  $\mu\text{m}$ .

19. A method according to claim 9, wherein the specific surface area of the inorganic filler is from 3 g.m<sup>-2</sup> to 6 g.m<sup>-2</sup> as measured by the BET nitrogen method.
20. A method according to claim 9, wherein the top cut of the particles of the inorganic filler is not greater than about 10 μm.
21. A method according to claim 9, wherein the thermoplastic polymer comprises a polyolefin.
22. A method according to claim 21, wherein the polyolefin comprises a low density polyethylene or a linear low density polyethylene.
23. A method according to claim 9, wherein in step (d) the composition is extruded and, following extrusion, the film product is stretched in at least one direction.
24. A method according to claim 9, wherein in step (d) the amount of the filler contained in the filled thermoplastic composition is at least 30% by weight.
25. The method according to claim 9, wherein the interfering particles are removed to a level of below about 0.285% by weight.
26. The method according to claim 25, wherein the interfering particles are removed to a level of below about 0.15% by weight.
27. The method according to claim 26, wherein the interfering particles are removed to a level of below about 0.08% by weight.
28. A breathable film produced according to any of the preceding claims 9-27.
29. The method of claim 9, wherein the treated particles of an inorganic particulate material of step (a) are preheated prior to coating.

30. The method according to claim 9, further comprising milling the removed interfering particles in step (b) and reintroducing the milled interfering particles to the product prior to producing the thermoplastic composition of step (c).